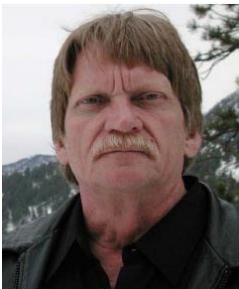


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Four Corners Wastewater Training 2021 Speaker Descriptions and Class Synopses

Our Speakers



Name: Rick Allen

Title: CEO/Founder of BioLynceus

About: Rick Allen has been involved in the environmental business for over twenty-five years. As the published author of "Critical Issues for Water & Wastewater Professionals" Mr. Allen provides his experience and knowledge to groups and organizations around the country on environmental issues that are grounded in current methodologies. He addresses difficult solutions to important business and operational issues. Mr. Allen provides consulting on a variety of topics including pro-biotic solutions and microbiological solutions for wastewater treatment. As the CEO of BioLynceus, he is invested in helping local communities find natural wastewater solutions for managing treatment of water and wastewater.



Name: Herb Fancher

Title: Lead Scientist/ Consultative Sales CO/UT

About: Herb has over 35 years of experience in scientific product sales and environmental consulting. He holds a master's degree in Botany and Zoology (Aquatic Biology) from the University of Wisconsin – Milwaukee – Center for Great Lakes Studies. Throughout his career Herb has provided technical training for diverse audiences across the U.S., as well as in Europe, South America, and S. Korea. He has been with BioLynceus (Bio-Lynn-see-us) since 2015 where his academic training along with extensive field experience help him apply biological solutions to common wastewater challenges.

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Name: Tanner Hartsock, M.S.

Title: Consultative Sales Pacific Northwest

About: Tanner is our sales representative covering the Pacific Northwest region. He graduated from the University of Iowa in 2019 with a master's in geology. He is passionate about the natural world and hopes to help preserve it for future generations. During his undergraduate education, Tanner spent his time working for the Iowa Geological Survey, which is where he gained interest in pursuing a career in environmental remediation. His goal is to help pioneer the use of microbial remediation programs for current and future environmental challenges, specifically those concerning water and soil.



Class Descriptions

Day 1

Pre-Treatment Strategies

Rick Allen

Time: 1 hour (8:30 – 9:30am)

Category: **Collections**, **Operations**, **Management**

In *Pretreatment Strategies* attendees will look at the types of programs that will be of benefit to their system. Program discussion of FOG (Fats, Oils, and Grease), H₂S Mitigation and other contaminants, including sanitary wipes and industrial users (IU or SIU) are examined.

In *Pre-Treatment Strategies*, professionals will learn the importance of managing for pre-treatment to optimize the efficiency of collections and plant operations. Rick will review program definitions and cost benefit considerations. He highlights program objectives for pretreatment and what your program needs to limit pollutants in your discharge. Rick discusses who need to be a part of your program and who to look out for. Beyond the scope of your program, he shares why placing these controls is important to other factors in the water cycle.

Compliance issues are discussed, strategies to mitigate them, and what it costs to deal with them.

Pretreatment Coordinators, Collection system and wastewater system professionals will benefit by learning key strategies to improve pretreatment and collection system management.

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Lagoon Management

Tanner Hartsock

Time: 1 hour (9:40 – 10:40am)

Category: **Collections**, **Operations**, **Management**

In *Lagoon Management*, operators learn the importance of managing for lagoon efficiency to optimize the efficiency of collections and plant operations. *Lagoon Management* also provides recommendations for managing sludge, chemical and biological influences, technologies, and opportunities to manage efficient wastewater systems and meet discharge requirements. Attendees will learn key elements of a good maintenance and management program for lagoon systems.

Discussion about problems with meeting permits including ways to improve the overall efficiency of the lagoon for improved DO, TSS, BOD, AN, Ph and Phosphorous are covered. The attendees will learn what short circuits lagoon systems and how to address common problems. Discussion on managing sludge to improve digestion is covered. Examination of the influences on lagoons and ways to improve the digestive operations of the lagoon system are covered.

In *Lagoon Management*, operators will learn valuable information about reducing sludge build-up in lagoons and processing plants, along with new proposed monitoring requirements for sludge and how to address the issue before it becomes regulated.

This presentation will include instruction on how to sludge judge a wastewater lagoon and create a sludge profile.

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Bio-Nutrient Reduction for Nitrification, Denitrification and Phosphorous **Herb Fancher**

Time: 1 hour (10:50 –11:50am)

Category: **Collections**, **Operations**, **Management**

With emerging mandates on managing nutrient loading and contaminants, there are additional regulatory concerns coming. In *Bio-Nutrient Reduction*, attendees will explore some of the reasons why these regulatory concerns are being created and some additional rules that are coming down the pipe. Attendees will look at some of the ways that systems can begin to prepare and address these issues in their operations.

During *Bio-Nutrient Reduction*, attendees will learn a variety of methods that are currently being used to manage nutrient levels in wastewater systems. Technical information on alternatives to mechanical solutions is reviewed and some case studies of how treatment solutions work on mitigating these contaminants are presented.

Herb will discuss the environmental impact of nutrients and specifically looks at Nitrates and Phosphates in waterways and systems. He will delve into the biological processes of breaking down these nutrients and discuss various strategies on how system operators can look at their processes to improve the biological nutrient removal.

During *Bio-Nutrient Reduction*, Herb Fancher will share a variety of methods that are currently being used to manage nutrient levels in wastewater systems. Exploration into engineered technologies including the use of natural



and mechanical technologies, help attendees to understand the ways systems can alter or modify their existing plants to meet standards.

Breakout Session 1



FOG: Managing FOG Producers

Rick Allen

Time: 1 hour (2:40 – 3:40pm)

Category: [Collections](#), [Operations](#), [Management](#)

Fats, Oils, and Grease hit municipalities operational and maintenance budgets. Working directly with the producers can help off-set some of these expenses. In *Managing Your FOG Producers*, Rick Allen brings forth educational information on ways attendees can address this critical issue in their system.

Rick will discuss; why FOG happens, why it is more prevalent in wastewater systems today and many cost-effective methods of removal. During this presentation attendees will learn about conventional methods of removal and control, along with new and innovative solutions to mitigate the problem.

This program will address ways to work with your FOG Producers to implement Best Management Practices. Within these operational challenges, Rick will discuss some of the new emerging technologies to address FOG and what your organization needs to know.

Educational case studies and long-term Operational and Maintenance information will be discussed to provide ways to get your FOG Producers to help eliminate what they are releasing into your system.



Rethinking Treatment Options

Rick Allen

Time: 1 Hour (3:50 – 4:50pm)

Category: **Collections**, **Operations**

With emerging mandates on managing systems, attendees look at the challenges of choosing between programs for treatment in wastewater that depend on either biological or mechanical or chemical solutions to solve problems in both collection systems and wastewater treatment plants.

In *Rethinking Treatment Options* discussion of the use of various materials in both pre-treatment and wastewater treatment plants is the focus of this class. Rick covers the common issues in plants and how new regulations are affecting operational considerations. He walks you through BioAugmentation, Biostimulation, and everything from how it works to how to use it.

Rick goes through scenario applications and how bugs, food, and enzymes can affect issues concerning infrastructure and upsets.

Several case studies are shared on how biological strategies were used to reduce FOG, TSS, and BOD in different treatment plants. Rick delves into the financial and environmental impact these strategies can improve as well as the significance of different seasons to their productivity.

Rethinking Treatment Options will also go over new developments in start-up and restart strategies.

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Class Descriptions

Day 2

The Changing World of Pre-Treatment

Rick Allen

Time: 1 hours (8:30 – 9:30am)

Category: **Collections**, **Operations**

In *The Changing World of Pretreatment*, professionals will learn the importance of managing and utilizing pre-treatment to enhance collection system and plant operations.

Attendees will look at the types of programs that will be of benefit to their system. Program discussion of FOG (Fats, Oils, and Grease), H₂S mitigation and other contaminants, including sanitary wipes and industrial users (IU or SIU) are examined.

During this presentation the potential effects of Cannabis growers and manufacturers on your system will be discussed. Specific protocols and programs are covered that may be utilized to help improve FOG, Odors, Corrosion, and the damaging impact of contaminants.

Pretreatment Coordinators, Collection system and wastewater system professionals will benefit by learning key strategies to improve pretreatment and collection system management. Programs and protocols along with emerging issues are included in the discussion of how systems around the country are improving their wastewater programs by incorporating pre-treatment and collection system management strategies



The Future of BioSolids Handling

Tanner Hartsock

Time: 1 hour (9:40 – 10:40am)

Category: Operations, Management

Sustainable biosolids handling strategies are becoming increasingly difficult to develop. For land applications, the most common biosolids disposal technique, wastewater facilities (WRRFs) must produce either Class A or Class B biosolids. Even if these requirements are met, some WRRFs are faced with local pressure, forcing them to alter the course of their biosolids handling program.

Biosolids regulations have seen little change since the first regulations were established in 1993, and mounting pressure on the Environmental Protection Agency makes future changes both likely and imminent. Additionally, contaminants such as per-polyfluoroalkyl substances (PFAS) are sure to complicate regulations moving forward. Even landfill applications are uncertain: recently, the state of California banned the use of biosolids as an alternative landfill cover. Now more than ever, WRRFs are considering innovative, even novel technologies for managing their biosolids. Bioaugmentation can be used to degrade volatile biosolids and therefore should be considered as a viable approach to reduce the amount of biosolids at WRRFs. Research has shown that microbes capable of producing amylase enzymes can hydrolyze cellulose, a primary component of wastewater sludge, and convert it to glucose, a form of soluble carbonaceous biochemical oxygen demand (cBOD). This soluble glucose is readily available as a food source to both the added microbiology and the existing sludge biomass, reducing sludge volumes by up to 40%. Probiotic additions are common in lagoon systems, reducing costs associated with

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dredging, dewatering, hauling, and recently, biological sludge reduction at mechanical wastewater facilities has received attention as an alternative means to reduce costs associated with dewatering and hauling. As regulations become more stringent, the time to consider new technologies for biosolids reduction is now.



ProBiotic Dredging

Rick Allen

Time: 1 Hour (10:50 – 11:50)

Category: Operations, Management

Pro-Biotic Dredging[®] for the removal of sludge deposits includes how the process works. Discussion of different methods of sludge removal, how to determine your cost of removal, and some new and accepted alternatives to mechanical extraction processes. Attendees will learn methods you can use today to improve your ROI in wastewater processes.

This session covers how to save municipal wastewater system tens or even hundreds of thousands of dollars in removal costs. will discuss how sludge calculators can help operators determine their sludge levels, including the cost of management of sludge. Attendees will learn how to use a financial calculator created to help systems determine their sludge management costs.

Here we introduce microbiology as new and cost-effective strategy for removing sludge from wastewater lagoons, ponds, and even freshwater lakes. Every wastewater facility is facing a growing sludge problem. Whether known or unknown, sludge handling and accumulation are becoming more regulated every year.

ProBiotic Dredging[®] will include analytics from wastewater facilities around the country and how wastewater operators have saved as much as \$1.2 million in dredging costs.



Along with annual cost savings, operators will learn how to delay or even eliminate some of the cost of expensive retrofits and how to increase the productivity of existing operations.

Breakout Session 2



Collection System Management

Rick Allen

Time: 1 hour (2:40 – 3:40 pm)

Category: **Collections**, **Management**

In *Collection System Management* attendees will look at the types of programs that will be of benefit to their system. We examine the effects of FOG (Fats, Oils, and Grease), H₂S and other contaminants. We then share what you can do to mitigate these problems.

In Collection Systems Management we cover specific protocols and programs that help improve FOG, Odors, Corrosion and the damaging impact of contaminants.

Collection system and wastewater system professionals will benefit by learning key strategies to improve collection system management. Emerging issues are included in the discussion of how systems around the country are improving their wastewater programs by incorporating pre-treatment and collection system management strategies.



Public Education

Rick Allen

Time: 1 hours (3:50 – 4:50 pm)

Category: Management

This discussion will be focused on several ways, municipalities and industries can work within their community to enlighten residence and workers. There are many methods that have been tried over the last few years to reduce the use of Sanitary Wipes and FOG (Fats, Oils, and Grease) entering our wastewater systems. During this interactive presentation, Rick will discuss some of the successful, and less than successful, methods he has seen over the last 20 years.

This presentation should be on your must-do list. Some questions that will be discussed are:

What is the best approach for education?

Who needs education?

Who should be providing the education?

There are many programs available through other communities that may help your team achieve success in managing your systems.